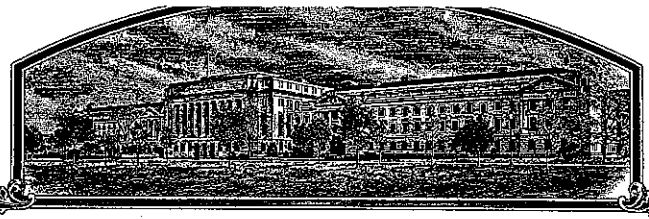
No. 9700073



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pennsylvania Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT R PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR RENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN ITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 15 NDED, 7 U.S.C. 2321 ET SEQ.)

BENTGRASS, CREEPING

'Penn G-6'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighth day of October, in the year two thousand and four.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.*

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*

Pennsylvania Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

G-6

3. VARIETY NAME

Penn G-6
~~Creeping Bentgrass~~
RAD 10/13/2004

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*

0217 Agricultural Administration Building
The Pennsylvania State University
University Park, PA 16802

5. TELEPHONE *(include area code)*

814-865-5410

6. FAX *(include area code)*

814-863-7905

FOR OFFICIAL USE ONLY

PVPO NUMBER 9700073

FILING DATE: Jan. 2, 1997

7. GENUS AND SPECIES NAME

Agrostis palustris

8. FAMILY NAME *(Botanical)*

Gramineae

9. CROP KIND NAME *(Common name)*

Creeping Bentgrass

FEES RECEIVED

FILING AND EXAMINATION FEE: $ 2450.00
DATE: JAN. 2, 1997

CERTIFICATION FEE: $ 432.00
DATE: 9/20/04

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*

Land Grant University

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. ~~Charles R. Krueger~~ Bruce A. McPheron
RAD 11/16/04
Associate Dean
0217 Agricultural Administration Building
University Park, PA 16802

14. TELEPHONE *(include area code)*

15. FAX *(include area code)*

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*

☒ YES *(If "yes," answer items 18 and 19 below)* ☐ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☒ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

☒ YES *(If "yes," give names of countries and dates)* ☐ NO

USA, January 24, 1996 Commercial Sale

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* Charles R. Krueger		NAME *(Please print or type)*	
CAPACITY OR TITLE Associate Dean	DATE 10/17/96	CAPACITY OR TITLE	DATE

STD-470 (03-96) *(Previous editions are to be destroyed)*

(See reverse for instructions and information collection burden statement)

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed Exhibits A, B, C, E; (3) at least 2,500 viable untreated seeds, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Blvd., Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the Certificate.

Plant Variety Protection Office
Telephone: (301) 504-5518

ITEM

16a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;

(2) the details of subsequent stages of selection and multiplication;

(3) evidence of uniformity and stability; and

(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified.

16b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;

(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences;

(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

16c. Exhibit C forms are available from the PVPO for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

16d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

16e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

17. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant may **NOT** reverse this affirmative decision after the variety has been sold and so labelled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

20. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant should check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089.

№-9700073

Attachment for Application Item 20.

	PSU Release[1]	PSU PVP Application[2]	PVP Application Date[3]	First Commercial Sale
Penn A-1	08-29-95	10-17-96	11-26-96	11-30-95
Penn A-2	08-29-95	10-17-96	12-19-96	02-27-96
Penn A-4	08-29-95	10-17-96	12-19-96	01-24-96
Penn G-1	08-29-95	02-21-97	02-26-97	05-20-96
Penn G-2	08-29-95	10-17-96	12-12-96	01-10-96
Penn G-6	08-29-95	10-17-96	01-02-97	01-24-96
Seaside II	08-29-95	10-17-96	12-12-96	01-26-96

[1]PSU Release - Date Pennsylvania Experiment Station Seed Committee approved variety release

[2]PSU PVP Application - Date on PSU PVP application form

[3]PVP Application - Application date of variety by PVP office as listed in PVP Official Journal, Vol. 25, December 1997

Penn G-6

Origin and Breeding History of Penn A-1, A-2, A-4, G-1, G-2, G-6

The objective of this varietal breeding program was to develop creeping bentgrasses exhibiting superior putting green turf over existing varieties. Original parental material was selected from segregated patches of bent, 12 to 18 inches in diameter, on some greens at the Augusta National Golf Club, Augusta, Georgia in the spring of 1984. These segregates attracted attention because they were vigorous and dense, very fine textured, and had a more upright growth habit of individual plant tillers. The growth habit was unique because the selected segregates did not spike (raise up) from golfer's metal-spiked golf shoes. Their ability to spread at a closer than normal height of cut used for fast greens was also indicative of potential heat tolerance in a hot, humid golf course environment. The value of non-spiking features was proven in subsequent years by the banning of golf shoes with metal spikes on most American golf courses, except for professional tournaments.

There were two groups of selections by the breeder, the 'G' and 'A' series. There were eight 'G' selections (G-1 to G-8) from two greens on the Par 3 course originally seeded to Penneagle creeping bent, and six selections (A-1 to A-6) from four greens on the main course originally seeded to Penncross creeping bent.

The breeding method used was a polycross procedure. The single parent selection of Penn G-6 was crossed with experimental selections of Penn A followed by two generations of crossing selected sib plants of Penn G-6.

Both 'G' and 'A' series selections were cloned into eight plants, pot planted, and induced to flower in growth chambers for six weeks. Isolated crossing blocks were established in the greenhouse for each 'G' and 'A' line in December 1984. Due to near self-sterility of bent, 'A' line plants were used as male crossing parents for 'G' lines, and conversely, 'G' plants used as male parents for the 'A' lines. Seed was produced from all crosses in March. Next 250 plants from bulk seed of each 14 lines (G-1, G-2, G-3, G-4, G-5, G-6, G-7, G-8 and A-1, A-2, A-3, A-4, A-5, and A-6) were nursery space planted in isolated field blocks in August 1985.

The first cycle of reselection began in the spring of 1986. First plants to be chemically rogued were those lacking in vigor coming out of winter. Majority of plants had a more upright growth with short stolons in keeping with their putting green selections. There were a few semi-decumbent types with longer stolons and dense ball types. The emphasis was on selecting the most uniform in upright growth habit, vigor, and uniformity in pre-anthesis flowering. On this basis, 30 to 50 plants were selected from each block of A-1, A-2, A-4, G-1, G-2, and G-6. All other 'A' and 'G' lines were discarded due to a combination of segregation and lack of vigor uniformity.

Seed was harvested from selected lines (G-1, G-2, G-6, A-1, A-2, and A-4) and used for small turf plots which confirmed the fine, dense qualities of original parents. The

selected clones of the first cycle were pot planted, cloned, and again induced to flower in growth chambers to save a year. Plants of each line were in isolated greenhouse crossing blocks. Crossing in this cycle was confined to the siblings of each line with no other pollen source. From the crossed plants of each line, 300 seedlings were grown for field planting for the next cycle of reselection in 1987.

The second cycle of reselection in 1987 consisted of arbitrarily selecting 40 to 50 plants as a reasonable number to work with and with the main criterion of selecting an upright growth habit eliminating all but very short stolon types, uniformity of size and vigor, and flowering. Confining the pollen source in this crossing within the G-6 parents resulted in increasing the population of desired growth habit types and reducing the longer stolon types to a few. Most of the "off-types" were limited to the dense ball types with few flowering heads.

Forty clones of each G and A were recloned to three plants and sent to Oregon for further evaluation and reselection under production state conditions where growth is more robust than in Pennsylvania and where commercial production would eventually take place. Following observations, 20 clones each were selected as potential Breeders parents. Seed of each G and A line was used to plant half acre observation, seed yields, and management trials. Satisfactory uniformity and stability of the G and A bent varieties from Oregon grown first generation seed was ascertained by inspection in both the vegetative and flowering stages of growth by the breeder, pure seed testing personnel, and Oregon certification. Variants consisted of a few more spreading decumbent types and the non-spreading ball types. The decumbent type seed heads protrude laterally at plant perimeters and the ball types produce few or no flowers. The decumbent variants for G-6 were calculated to constitute 0.09% based on 26 plants per half acre of an estimated population of 39,000 plants.

By agreement with the Bentgrass Growers Association with proprietary rights, all observed variants shall be chemically rogued to maintain varietal purity and stability in order to maintain a certified stand life of five seed yield years. To further maintain varietal purity, the commercial production of Penn G and A bents shall be limited to a two generation system, Breeder and Certified; the only varieties limited to only two generations.

Three cycles of five year stands of commercial plantings have shown that Penn G-6 is a uniform and stable variety to the satisfaction of the breeder and Oregon Certification with no further reselection deemed necessary.

Breeder seeds of Penn G-6 has been maintained and produced by Pure Seed Testing in Hubbard Oregon since 1994. Approval of the variety name has been cleared by the Seed Branch on May 21, 2003.

№ - 9700073

Exhibit 16B
(Revised)

Variety Distinction of Penn G-6

A PVP nursery was established at University Park, Pennsylvania in 1994 consisting of 21 creeping bent varieties with three replications of 25 spaced plants. Included were Penn G-6, plus six new Penn State varietal releases Penn G-1, G-2, A-1, A-2, A-4, Seaside II, and 13 commercial varieties. Data were collected in 1995 as shown in Table 1. This nursery was discarded due to loss of land.

A second PVP nursery was established at the Pure Seed Testing Research Farm near Hubbard, Oregon in 1995. The purpose was to evaluate plants in the location of major bentgrass commercial production where growth greatly exceeds the environment in the Northeast. It consisted of the above experimentals and 12 commercial varieties with four replications of 25 spaced plants. This test was maintained and data collected and analyzed by Pure Seed personnel after the original application for PVP. These data are shown in Tables 2 and 3. Varieties significantly different by years from Penn G-6 are summarized in Table 4. In this form, the most obvious differences and similarities are easily discerned.

Penn G-6 may be most easily distinguished from other bentgrass varieties tested predominately by plant height, base spread, panicle length, and flag leaf length based on morphological characters measured in three years of testing. It is most similar to Cato differing only in panicle length for two years and flag leaf length and width for one year. Other differences were the following:

Characteristic	Penn G-6	vs	Cato
Growth habit	Geniculate		Prostrate
Lemma shape	Ovate		Eliptic

Exhibit C
(Revised)

U.S. Department of Agriculture
Agricultural Marketing Service
Science Division
Beltsville, Maryland 20705

№ - 9700073

OBJECTIVE DESCRIPTION OF VARIETY
BENTGRASS (Agrostis spp.)

Name of Applicant(s)	Variety Name or Temporary Designation
Pennsylvania Agricultural Experiment Station	Penn G-6 (G-6)
Address (Street and No. or R.F.D. No, City, & ZIP Code)	FOR OFFICIAL USE ONLY
0217 Agricultural Administration Bldg. The Pennsylvania State University University Park, PA 16802	PVPO Number

Place numbers in the boxes (e.g. [0][8][9]) for the characters that best describe typical plants of this variety. The symbol . indicates decimal.

COMPARISON VARIETIES FOR USE BELOW

1= Astoria 2= Exeter 3= Highland 4= Seaside 5= Penncross 6= Kingstown
7= Astra 8= Other Pennlinks 9-Cato 10-Penneagle

1. SPECIES:

[2] 1= Colonial (browntop) A. tenuis 2= Creeping A. stolonifera (A.palustris)
3= Velvet A. canina ssp. canina 4= Brown bent A. canina ssp. montana
5= Red top A. gigantea

2. ADAPTATION: (0= Not Tested, 1= Not Adapted, 2= Adapted)

[2] Northeast [2] Southeast [2] North Central [2] Pacific N. W.
[ ] Other (Specify) _____

3. MATURITY (At first anthesis): Use comparison varieties

[0][5] Days earlier than [5] , Maturity same as [4] , [0][5] Days later than [1][0]

4. HEIGHT (Average of longest 10 shoots from soil surface to top of head):

[ ][4][0] Cm Height (at maturity)

[1][5] Cm Shorter than [4]
Height same as [9]
[ ][ ] Cm Taller than [ ]
Comparison Variety

5. GROWTH HABIT:

[ ][ ][ ] % Prostrate [ ][0][9] % Decumbent [ ][9][9] % Geniculate [ ][ ][ ] % Erect

№ - 9700073

6. VEGETATIVE REPRODUCTION:

[1] Rhizomes 1= Absent 2= Present [2] Stolons 1= Absent 2= Present

[ ][ ][ ] % Rhizomes [1][0][0] %

7. LEAF BLADE:

[3] Color: 1= Yellowish Green (Cohansey) 2= Light Green (Washington)
3= Green (Exeter) 4= Dark Green (Kingstown, Tracenta)
5= Bluish Green (Highland) 6= Other (Specify) _____

[1] Texture: (fineness)
1= Very fine (Kingstown) 2= Fine (Exeter)
3= Medium fine (Astoria) 4= Medium (Seaside)
5= Medium coarse (Virginia) 6= Coarse (Vermont)

[ ][ ][ ][ ] Stomatal density upper leaf surface (Number/mm^2)

Lower Surface: [ ][ ][ ] % Smooth [ ][ ][ ] % Rough

Upper Surface: [ ][ ][ ] % Smooth [ ][ ][ ] % Rough

Margins: [ ][ ][ ] % Smooth [ ][ ][ ] % Rough

[ ][ ] Mm Width (Average of 10) [ ][ ] Mm Narrower than [ ]
Width same as [ ]
[ ][ ] Mm Wider than [ ]
} Comparison Variety

[3][0] Mm Width (Flag leaves) [5][9] Cm Length (Flag leaves)

8. LEAF SHEATH:

[1] Anthocyanin: 1= Absent 2= Present [ ][ ][ ] % Red sheaths

9. LIGULE (Lower and middle leaves):

Shape at Apex: [1][0][0] % Acute [ ][ ][ ] % Rounded [ ][ ] % Truncate
[ ][ ][ ] % Other (Specify) _____

Pubescence: [9][0] % Glabrous [1][0] % Pubescent

Margins: [9][0] % Entire [1][0] % Toothed
[ ][ ][ ] % Other (Specify) _____

[ ][ ] Mm Length

10. LEMMA:

Shape: [ ]% Lanceolate [100]% Ovate [ ]% Obovate

[ ]% Elliptic [ ]% Oblong [ ]% Other (Specify) _____

[42] Mm Width [15] Mm Length (exclusive of awn)

Color: [ ]% Buff [100]% Silvery [ ]% Other (Specify) _____

Surface: [100]% Glossy [ ]% Dull

Texture: [100]% Smooth [ ]% Punctate

Pubescence: [100]% Glabrous [ ]% Sparse [ ]% Copious

Basal Hairs: [100]% Absent [ ]% Few [ ]% Many

[ ]% Short [ ]% Long

[ ]% Appressed [ ]% Ascending [ ]% Spreading

Awns: [100]% Absent [ ]% Few [ ]% Many

[ ]% Awn-pointed [ ]% Short [ ]% Long

[ ]% Straight [ ]% Geniculate

Awn Insertion on Lemma:

[ ]% Basal [ ]% Middle [ ]% Distal

---

11. PANICLE:

Type (in anthesis): [10]% Open [90]% Compact

Anthocyanin: [10]% Absent [90]% Present

Branches in Anthesis: [100]% Appressed [ ]% Ascending [ ]% Spreading

Branches in Fruit: [100]% Appressed [ ]% Ascending [ ]% Spreading

Branch Surface: [90]% Smooth [10]% Scabrous

---

12. SEED:

[69] Grams per 1000 seed

---

13. SPRING GREEN UP:

[2] 1= Early (Exeter) 2= Medium (Astoria) 3= Late (Kingstown)

---

14. ENVIRONMENTAL RESISTANCE: (0= Not tested, 1= Susceptible 2= Resistant)

[2] Cold [2] Heat [ ] Drought [ ] Shade [ ] Other (Specify) _____

15. DISEASE RESISTANCE (0= Not tested 1= Susceptible 2= Resistant):

[2] Red Leaf Spot - Drechslera erythrospila
[ ] Helminthosporium Leaf Spot (Bipolaris sorokiniana)
[ ] Melting Out - Drechslera poae (Helminthosporium vagans)
[2] Dollar Spot -(Sclerotinia homoeocarpa)
[ ] Pythium Blight - (P. aphanidermatum)
[1] Pythium Blight (P. ultimum)
[ ] Fusarium Blight (F. roseum)
[ ] Fusarium Blight (F. tricinctum)
[2] Fusarium Patch (Pink Snow Mold) (F. nivale)
[ ] Powdery Mildew (Erysiphe graminis)
[ ] Ophiobolus Patch (O. graminis)
[ ] Stripe Smut (Ustilago striiformis)
[1] Copper Spot (Gloeocercospora sorghi)
[ ] Typhula Blight (Snow Scald) (T. incarnata)
[ ] Red Thread (Corticium fuciforme)
[2] Brown Patch (Rhizoctonia solani)
[ ] Stem Rust (Puccinia graminis)
[ ] Crown Rust (P. coronata)
[ ] Leaf Rust (P. poae-nemoralis)
[ ] Other _____

16. INSECT RESISTANCE (0= Not tested, 1= Susceptible, 2= Resistant):

[ ] European Chafer (Amphimallon solstitialis)
[ ] Garden Chafer (Phyllopertha horticola)
[ ] Chinch Bug (Blissus insularis)
[ ] Webworm (Crambus spp.)
[ ] Armyworm (Cutworm) (Pseudaletia unipuncta)
[ ] Other _____

17. GIVE VARIETY(S) THAT MOST CLOSELY RESEMBLE THE SUBMITTED VARIETY: For the following characteristics indicate degree of resemblance (D.R.) with one of the following numbers: 1= Submitted variety is less than, lighter, or inferior to similar variety, 2= Same as, 3= More than, darker or superior, etc.

Character	Similar Variety	D.R.	Character	Similar Variety	D.R.
Growth Habit	Cato	2	Leaf Color	Cato	2
Awn Length			Panicle Type		
Seed Weight			Turf Fineness	Cato	3
Cold Resistance	Cato	2	Heat Resistance	Cato	3
Drought Resistance			Shade Resistance		
Brown Patch	Cato	2	Moss Resistance		

18. COMMENTS:

Table 1. Morphological Character Measurements[1] 1995

	Plant Height (cm)		Base Spread (cm)		Panicle Length (cm)		Flag Leaf Length (cm)		Flag Leaf Width (mm)		# Bottom Whorl Branches
Seaside	40.2	Penn G-1	32.0	Seaside	8.5	Seaside	5.5	Seaside	2.8	Putter	5.0
Seaside II	37.8	Penn A-1	33.0	Cobra	8.3	Penncross	5.3	Putter	2.7	Seaside	4.7
Penn G-1	36.0	Penn A-4	34.0	Seaside II	7.8	Seaside II	5.2	Regent	2.7	Penncross	4.5
Penncross	34.3	Penn A-2	35.0	Penncross	7.8	Penn A-1	4.8	Penn A-1	2.6	Crenshaw	4.5
Penn G-2	34.3	Penn G-2	36.0	Penneagle	7.8	Penn A-2	4.8	Southshore	2.6	Procup	4.5
Penneagle	34.1	**Penn G-6**	**36.0**	Southshore	7.6	Procup	4.7	Penn A-4	2.5	Penn A-1	4.3
Pennlinks	34.0	Pennlinks	41.0	Regent	7.2	SR 1020	4.5	Penneagle	2.5	Penn G-2	4.2
Penn A-4	33.7	Cato	44.0	Pennlinks	7.1	Penn G-2	4.5	Lopez	2.5	Penn A-2	4.2
Putter	33.2	Crenshaw	45.0	Procup	7.0	Penneagle	4.4	Cato	2.5	Penneagle	4.1
Southshore	33.1	Providence	47.0	Putter	6.9	Pennlinks	4.4	Penn G-1	2.4	Seaside II	4.0
Regent	32.8	Lopez	47.0	SR 1020	6.9	Southshore	4.4	Penn A-2	2.4	**Penn G-6**	**4.0**
SR 1020	32.8	Penneagle	48.0	Penn A-4	6.6	Penn A-4	4.3	SR 1020	2.4	Southshore	4.0
Crenshaw	31.5	Procup	51.0	Lopez	6.6	Regent	4.3	Pennlinks	2.4	Regent	4.0
Procup	31.1	Putter	55.0	Providence	6.6	Providence	4.3	Seaside II	2.3	Lopez	3.9
Lopez	30.7	Regent	62.0	Penn A-1	6.6	Penn G-1	4.2	Cobra	2.3	Pennlinks	3.9
Cato	30.3	Southshore	64.0	Cato	6.5	Putter	4.1	Penncross	2.3	Penn A-4	3.8
Providence	29.8	Cobra	65.0	Crenshaw	6.4	Crenshaw	4.1	Penn G-2	2.2	SR 1020	3.8
Penn A-1	29.7	SR 1020	69.0	Penn G-2	6.2	Lopez	4.1	Providence	2.2	Cato	3.7
Penn A-2	29.5	Seaside II	72.0	Penn G-1	6.0	Cato	4.0	Crenshaw	2.1	Providence	3.6
Penn G-6	**28.4**	Penncross	80.0	**Penn G-6**	**5.7**	**Penn G-6**	**3.6**	**Penn G-6**	**2.1**	Penn G-1	3.6
		Seaside	82.0	Penn A-2	5.5			Procup	1.7		
LSD (0.05)	2.1		9.1		0.6		0.5		0.3		0.6

[1]Penn State University Breeding Nursery, University Park, PA. Three replications of 25 space plants each.

#-9700073

Table 2. Morphological Character Measurements[1] 1996

	Plant Height (cm)		Panicle Length (cm)		Flag Leaf Length (cm)		Flag Leaf Width (mm)		# Bottom Whorl Branches
Seaside II	63.8	Penn A-1	13.1	Penn G-1	9.25	Providence	4.80	Penn A-1	7.3
Seaside	63.1	Seaside	13.0	Seaside II	9.03	Seaside II	4.57	Penn A-2	7.0
Penn A-1	62.5	Southshore	12.8	Seaside	8.90	Lopez	4.53	Procup	7.0
Southshore	60.2	Crenshaw	12.3	Regent	8.47	Crenshaw	4.52	Crenshaw	6.7
Penn G-2	57.1	Cato	12.2	Procup	8.26	Penn A-1	4.45	Lopez	6.6
Crenshaw	54.1	Penn G-1	11.7	Penn A-1	7.98	Cato	4.40	Putter	6.4
Providence	53.1	Penn G-6	11.7	Putter	7.91	Procup	4.37	Penneagle	6.4
Penn G-1	53.0	Seaside II	11.6	Penn G-6	7.82	Penncross	4.32	Pennlinks	6.4
Penn A-2	52.2	Penn A-4	11.6	Cato	7.78	Penn G-6	4.17	Penn G-6	6.3
Regent	51.4	Penn G-2	11.4	Penn A-2	7.73	Southshore	4.17	Penncross	6.3
Putter	49.9	Putter	11.2	Crenshaw	7.48	Penn G-2	3.95	Providence	6.3
Lopez	47.5	Pennlinks	11.0	Penn G-2	7.43	Pennlinks	3.83	SR 1020	6.0
Penn A-4	46.7	Regent	11.0	Lopez	7.13	SR 1020	3.82	Cato	5.8
Penneagle	46.0	Penneagle	11.0	Penncross	7.06	Penn A-4	3.77	Penn G-2	5.6
SR 1020	44.3	Procup	10.8	Southshore	7.06	Putter	3.75	Regent	5.6
Procup	44.3	Lopez	10.5	Penneagle	6.87	Penneagle	3.62	Penn G-1	5.6
Penn G-6	43.2	Providence	10.2	SR 1020	6.86	Seaside	3.43	Southshore	5.5
Penncross	43.2	SR 1020	10.0	Providence	6.68	Penn G-1	2.83	Seaside II	5.4
Cato	42.3	Penncross	10.0	Pennlinks	6.50	Penn A-2	2.58	Seaside	4.8
Pennlinks	37.8	Penn A-2	9.9	Penn A-4	5.90	Regent	2.38	Penn A-4	4.6
LSD (0.05)	5.2		0.67		1.56		0.96		0.93

[1]Pure Seed Testing Research Farm, Hubbard, Oregon. Four replications of 25 space plants each.

Table 3. Morphological Character Measurements[1] 1997

	Plant Height (cm)		Panicle Length (cm)		Flag Leaf Length (cm)		Flag Leaf Width (mm)		# Bottom Whorl Branches
Seaside	63.2	Seaside	12.2	Seaside	7.58	Seaside	4.50	Penncross	5.18
Penneagle	59.4	Pennlinks	11.3	Providence	7.05	Penneagle	4.27	Penneagle	4.95
Penn G-1	55.9	Penneagle	11.1	Southshore	7.00	Procup	3.35	Putter	4.95
Seaside II	54.6	Crenshaw	10.7	Penn G-2	6.98	Penncross	3.30	Penn G-1	4.63
Pennlinks	53.9	Providence	10.4	Seaside II	6.97	Lopez	3.23	Seaside II	4.62
Lopez	53.6	Seaside II	10.3	Pennlinks	6.72	Penn G-1	3.12	Lopez	4.53
Penn A-4	53.5	Southshore	10.1	Crenshaw	6.68	Penn A-1	3.00	Penn A-2	4.50
Penn A-2	53.4	SR 1020	10.0	Cato	6.55	Putter	2.95	Providence	4.67
Penn A-1	53.0	Regent	10.0	SR 1020	6.40	Penn A-4	2.93	Southshore	4.42
Penn G-2	52.7	Cato	10.0	Penn G-1	6.04	Pennlinks	2.82	Crenshaw	4.37
Southshore	52.2	Penncross	9.9	Penneagle	5.77	Penn A-2	2.82	Pennlinks	4.35
Regent	51.6	Penn G-1	9.8	Penncross	5.71	Penn G-2	2.73	SR 1020	4.28
Providence	50.1	Penn G-2	9.6	Penn A-1	5.26	**Penn G-6**	**2.70**	Regent	4.17
SR 1020	49.8	Penn A-2	9.4	Procup	4.87	Cato	2.70	Seaside	4.17
Cato	49.4	Penn A-1	9.3	Penn A-4	4.82	Providence	2.67	Penn G-2	4.17
Putter	49.1	Putter	9.1	Penn A-2	4.55	Regent	2.58	Cato	4.00
Penn G-6	**47.6**	Lopez	9.1	Lopez	4.35	Crenshaw	2.58	Penn A-4	3.82
Penncross	47.4	Penn A-4	8.9	**Penn G-6**	**4.29**	Seaside II	2.45	Penn A-1	3.60
Procup	46.8	Procup	8.1	Regent	3.97	SR 1020	2.40	**Penn G-6**	**3.45**
Crenshaw	46.3	**Penn G-6**	**7.9**	Putter	3.83	Southshore	2.37	Procup	3.43
LSD (0.05)	2.9		0.75		0.54		0.30		0.59

[1]Pure Seed Testing Research Farm, Hubbard, Oregon. Second Year Test.

Table 4. Varieties Significantly different from Penn G-6 for Listed Years 1995, 1996, 1997.

Variety	Plant Height	Vegetative Base Spread	Panicle Length	Flag Leaf Length	Flag Leaf Width	# Lower Whorl Branches	Total Years
Penn A-1	96 97		95 96 97	95 97	95	96	9
Penn A-2	96 97		96 97	95	96	97	7
Penn A-4	95 97		95 97	95 96	95	96	8
Penn G-1	95 96 97		97	95 97	96 97	97	9
Penn G-2	95 96 97		97	95 97		97	7
Seaside II	95 96 97	95	95 97	95 97		97	9
Seaside	95 96 97	95	95 96 97	95 97	95 97	95 96 97	14
Penncross	95	95	95 96 97	95 97	97	97	9
Penneagle	95 96 97	95	95 96 97	95 97	95 97	97	12
Pennlinks	95 96 97		95 96 97	95 96 97		97	10
Putter	95 96	95	95 97	95	97		7
Southshore	95 96 97	95	95 96 97	95 97	95 97	97	12
Regent	95 96 97	95	95 96 97	95	95 96	97	11
SR 1020	95	95	95 96 97	95 97		97	8
Crenshaw	95 96	95	95 97			97	6
ProCup	95	95	95 96	95 97	95 97		8
Lopez	95 97	95		95 96 97	95 97	97	9
Providence	96	95	96 97	95 97		97	7
Cato			95 97	97	95		4
Total Years	40	12	42	34	20	18	

Exhibit D
(Revised)

Additional Description of Penn G-6

In close-cut putting green management tests Penn G-6 is high quality, dense, fine textured bent. In space plant morphology, it is very similar to Cato differing only in panicle length for two years and flag leaf length and width for one year. However in turf texture and quality, Penn G-6 produces a more superior turf as shown in the following:

Table 5. Two year leaf width measurements: 0.3 and 0.73 versus 0.80 and 0.84; and 0.71 versus 0.80.

Table 6. Gold course quality rating for four years in Alabama: 6.0 versus 5.1.

Table 7. Golf course quality rating for four years in New York: 6.9 versus 5.3.

Table 8. Golf course quality rating for four years in California: 7.4 versus 6.5.

Table 9. Golf course quality rating for four years in Illinois: 7.5 versus 6.5.

Table 10. Golf course quality rating for four years in Kentucky: 7.1 versus 6.6.

Table 5. Leaf texture[1] of putting green bent maintained at 4.0 mm as putting green turf in three locations.

University Park, PA			Augusta, GA		Turin, Italy	
	1993	1999		1993		1992
Penn G-2	0.61	0.73	Penn A-2	0.63	Penn G-2	0.63
Penn G-6	0.63	0.73	Penn A-1	0.65	Penn G-6	0.70
Penn A-1	0.63	0.75	Penn G-2	0.65	Penn A-1	0.70
FHG-1	0.63		Penn G-1	0.68	Penn G-1	0.72
Penn G-1	0.65	0.69	Penn A-4	0.69	Seaside II	0.79
Penn A-2	0.67	0.71	Penn G-6	0.71	Pennlinks	0.80
Penn A-4	0.69	0.76	Crenshaw	0.79	SR-1020	0.84
Seaside II	0.74	0.76	Cato	0.80	Southshore	0.85
Pennlinks	0.77	0.93	Seaside II	0.80	Penncross	0.85
Cato	0.80	0.84	Penncross	0.99	Providence	0.86
SR-1020	0.80	0.84			Putter	0.88
Providence	0.81	0.96			Cobra	0.90
Penneagle	0.85	0.95			National	0.90
Putter	0.89				Seaside	0.90
Carmen	0.93				Penneagle	0.95
Cobra	0.95				Emerald	0.96
Penncross	0.99	0.99				
Seaside	1.01	0.99				
Emerald	1.12					
LSD (0.05)	0.04	0.09		0.06		0.10

[1]Leaf width of second sub-tended leaf (mm).

Table 6

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST
AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM) 1/
1998-2001 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	LEAF TEXTURE	WINTER COLOR 2000-01	PERCENT ESTABLISHMENT FALL	STIMPMETER READINGS 1999	QUALITY RATINGS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
PENN A-4	5.8	7.5	6.3	65.0	107.3	7.2	7.4	7.4	7.0	7.3	6.9	6.5	6.3	6.8	6.8	6.7	7.1	6.8
PENN A-1	6.1	7.0	6.5	43.3	103.7	6.8	6.9	7.0	7.2	7.2	6.7	6.3	6.3	6.6	7.1	6.7	6.9	6.6
PENN G-1	5.8	7.3	6.0	56.7	104.0	6.6	6.8	6.8	7.0	6.5	6.8	5.8	5.9	6.3	6.8	6.4	6.5	6.5
GRAND PRIX (LCB-103)	5.0	7.2	5.7	63.3	104.7	6.8	6.8	6.8	6.8	6.5	6.8	5.8	5.9	6.1	6.6	6.4	6.3	6.4
IMPERIAL	5.6	6.7	6.2	66.7	104.0	6.3	6.5	6.2	6.8	6.3	6.7	6.7	6.3	6.0	6.6	6.4	6.4	6.4
CRENSHAW	7.0	6.3	7.2	66.7	105.7	6.1	6.8	6.5	6.6	6.4	6.4	5.9	6.0	6.2	6.8	6.2	5.9	6.3
CENTURY	5.0	7.2	5.7	66.7	103.7	6.2	7.1	6.7	6.6	6.4	6.7	6.0	5.3	5.9	5.9	6.1	6.3	6.2
SR 1020	5.9	5.8	6.3	65.0	103.0	6.1	6.4	6.4	6.5	6.3	6.1	5.9	5.8	5.8	6.5	6.1	6.3	6.2
BACKSPIN	5.2	6.7	6.0	63.3	102.3	6.0	6.5	6.3	6.7	6.4	6.6	6.1	5.8	5.8	6.3	5.9	6.3	6.1
L-93	5.9	5.7	6.5	63.3	104.0	6.2	6.4	6.3	6.3	5.9	5.8	5.5	5.8	5.5	6.1	6.1	6.1	6.1
PENN G-6	6.1	6.3	6.7	55.0	104.0	5.9	6.8	6.4	6.3	6.1	6.1	5.3	4.8	5.8	6.3	6.3	5.9	6.0
SR 1119	7.0	5.8	7.8	63.3	105.7	6.0	6.3	6.3	6.3	6.3	6.0	5.5	5.4	5.7	6.1	6.0	5.7	5.9
PROVIDENCE	6.4	5.7	7.2	58.3	101.0	5.7	6.1	6.1	6.3	6.1	6.3	5.3	5.3	5.3	5.8	5.9	5.7	5.8
PUTTER	5.9	5.3	6.2	71.7	103.0	5.8	6.1	5.7	6.3	5.6	5.3	5.3	5.1	5.2	6.1	5.6	5.9	5.7
TRUELINE	6.3	6.0	6.8	53.3	98.7	5.4	5.9	5.8	5.9	5.3	5.9	5.3	5.2	5.3	6.0	5.7	5.7	5.6
VIPER	7.0	5.5	7.2	66.7	102.7	5.7	5.9	5.8	6.2	5.7	5.8	5.2	4.8	5.1	5.6	5.6	5.7	5.6
PENNCROSS	5.3	5.0	6.0	63.3	103.3	5.7	6.3	5.5	5.4	4.7	5.1	4.8	4.3	4.4	5.1	5.5	5.4	5.4
CATO	6.3	5.3	7.0	65.0	102.3	4.3	5.7	5.6	5.3	5.2	5.3	4.3	3.9	4.6	5.5	5.4	5.3	5.1
LSD VALUE	0.8	1.2	0.8	25.7	16.4	1.0	1.0	0.9	0.7	0.7	0.6	1.3	1.1	0.9	1.0	1.0	0.5	0.4
C.V. (%)	13.8	15.5	10.2	15.9	4.5	19.0	16.3	16.4	12.7	14.2	12.1	24.1	23.0	19.5	17.4	17.6	12.9	9.5

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

№-9700073

Table 7

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST
AT RYE, NY (WESTCHESTER COUNTRY CLUB) 1/
1998-2001 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	SEEDLING VIGOR	DENSITY SPRING	DENSITY SUMMER	DENSITY FALL	PERCENT LIVING COVER SUMMER 2000	PERCENT LIVING COVER FALL 2000	DOLLAR SPOT 1998	QUALITY RATINGS APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN
PENN A-4	5.6	6.6	8.9	7.3	8.4	8.4	7.8	94.3	97.0	7.3	7.3	8.6	8.8	7.6	8.0	7.3	8.1	8.3	8.0
CENTURY	3.8	6.4	8.8	7.0	7.8	8.0	7.6	91.7	85.0	5.7	7.1	8.3	8.5	7.3	7.8	7.3	7.0	6.7	7.6
PENN A-1	5.7	5.9	8.2	4.0	7.8	7.8	7.3	80.7	90.0	8.0	6.8	8.3	8.2	7.3	7.5	6.8	8.3	6.7	7.6
PENN G-1	5.8	6.7	8.2	7.0	7.8	7.5	7.2	89.0	81.7	8.0	7.5	8.0	8.3	7.9	7.3	6.9	7.7	6.7	7.6
GRAND PRIX (LCB-103)	3.5	6.2	7.8	8.0	6.9	7.2	7.0	91.7	91.7	7.7	6.6	7.3	7.5	7.7	7.0	6.6	7.2	5.7	7.0
L-93	7.2	5.3	6.8	5.0	6.4	6.4	6.3	88.3	73.3	8.7	6.0	7.3	7.5	6.9	7.3	6.3	6.8	7.0	6.9
PENN G-6	5.8	6.1	7.3	6.7	7.6	7.2	6.7	93.3	85.0	8.0	6.5	7.4	7.4	6.7	7.2	6.5	6.7	5.3	6.9
SR 1119	7.8	5.2	6.7	5.0	6.7	6.4	5.8	81.7	73.3	8.3	6.2	7.5	7.3	7.0	6.8	6.2	6.3	5.7	6.7
IMPERIAL	4.2	4.6	8.1	7.7	7.1	6.9	5.4	86.7	68.3	6.3	5.6	7.1	6.9	6.6	6.8	5.5	6.1	4.7	6.3
BACKSPIN	3.6	5.0	7.6	5.3	6.5	7.0	5.8	85.0	71.7	6.3	5.7	7.1	7.1	6.9	6.3	5.5	5.4	4.7	6.2
CRENSHAW	6.0	3.9	6.0	6.3	5.6	5.8	5.2	76.7	70.0	7.0	5.5	6.6	6.1	6.4	6.3	5.6	5.8	5.3	6.0
SR 1020	4.8	4.5	6.1	4.3	5.8	6.4	6.2	80.0	73.3	7.7	5.3	6.3	6.0	6.2	6.1	5.7	6.3	5.7	5.9
PROVIDENCE	5.4	5.7	5.9	6.7	5.4	5.3	5.1	70.0	70.0	8.7	5.7	6.3	5.4	6.1	5.2	4.6	5.4	5.0	5.5
CATO	6.0	4.1	6.3	4.7	5.3	5.2	5.0	70.0	68.3	7.7	4.6	6.3	5.8	6.1	5.0	4.4	5.3	5.3	5.3
TRUELINE	5.5	4.7	5.1	8.0	4.7	4.8	4.2	58.3	55.0	7.7	5.0	5.2	4.8	5.0	4.7	4.1	4.6	4.0	4.7
VIPER	6.8	3.3	5.7	6.7	5.3	4.6	4.2	48.3	55.0	8.0	4.3	5.4	4.8	5.0	4.3	3.8	4.9	4.3	4.6
PUTTER	4.0	3.2	4.2	7.3	3.4	3.8	3.3	50.0	45.0	8.3	3.8	4.3	3.8	4.8	3.8	3.3	3.7	4.0	3.9
PENNCROSS	2.8	4.6	2.7	6.3	2.8	3.2	2.0	55.0	40.0	8.7	3.3	3.8	2.8	3.4	2.9	2.8	3.0	2.0	3.1
LSD VALUE	0.7	1.0	0.6	1.7	0.8	0.9	1.1	9.7	10.1	0.9	0.9	0.7	0.6	0.7	0.7	1.0	0.7	0.9	0.4
C.V. (%)	18.2	25.3	10.7	15.9	16.9	20.3	21.8	8.3	9.3	7.0	22.1	15.1	12.7	13.5	15.5	23.5	13.7	10.9	9.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

Table 8

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST
AT BURLINGAME, CA (CRYSTAL SPRINGS G.C.) 1/
1998-2001 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

	QUALITY RATINGS												
NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
L-93	7.5	7.3	7.6	7.7	7.4	7.5	8.1	7.6	7.9	7.8	7.8	7.2	7.6
PENN A-4	7.1	7.6	7.7	7.5	7.4	7.9	7.9	7.1	7.5	7.3	7.5	7.2	7.5
PENN G-6	7.6	7.3	7.5	7.3	7.1	7.6	7.4	7.0	7.9	7.3	7.3	7.1	7.4
PENN A-1	7.4	7.2	7.5	7.3	7.2	7.3	7.8	7.3	7.5	6.8	7.4	7.1	7.3
GRAND PRIX (LCB-103)	7.2	7.3	7.5	7.0	6.9	7.1	7.5	7.3	7.5	7.3	7.3	6.8	7.2
IMPERIAL	7.5	7.3	7.5	7.4	7.2	7.1	6.9	7.0	6.8	7.0	7.6	7.0	7.2
PENN G-1	7.2	6.6	7.4	7.2	7.2	7.5	7.7	7.3	7.5	6.8	7.1	7.2	7.2
SR 1119	7.1	7.0	7.0	7.4	7.1	7.5	8.1	6.8	7.7	7.1	7.3	6.7	7.2
BACKSPIN	7.2	7.0	7.4	7.5	7.0	7.1	7.0	6.7	7.3	7.0	7.2	6.6	7.1
CRENSHAW	7.3	6.7	7.1	7.2	7.1	6.9	6.9	6.9	7.4	7.0	7.5	6.5	7.0
CENTURY	7.1	7.0	7.1	7.1	6.8	6.8	7.2	7.4	6.5	6.7	6.6	6.8	6.9
SR 1020	7.2	6.9	7.3	7.2	6.8	6.8	7.3	6.4	7.1	6.2	7.2	6.7	6.9
VIPER	7.3	7.0	7.2	6.7	6.9	6.8	7.0	6.7	6.8	6.4	7.0	6.7	6.9
PROVIDENCE	7.3	6.8	7.0	7.4	7.1	6.6	6.8	5.9	7.1	6.3	6.8	6.7	6.8
PUTTER	7.0	6.8	7.3	6.7	6.5	6.8	7.0	6.4	6.4	6.2	6.8	6.7	6.7
TRUELINE	6.8	6.4	7.2	6.8	6.4	6.9	6.9	6.4	6.5	6.3	7.1	6.3	6.7
CATO	6.5	6.4	6.7	6.7	6.5	6.9	7.1	6.2	6.8	5.8	6.3	6.3	6.5
PENNCROSS	6.2	5.7	6.5	6.1	5.8	5.9	5.8	6.3	6.0	5.8	6.0	5.6	6.0
LSD VALUE	0.7	0.9	1.2	0.7	1.0	1.0	0.7	1.0	1.0	1.0	1.4	1.1	0.4
C.V. (%)	10.3	13.6	13.0	11.7	13.9	14.8	12.6	15.4	15.9	17.0	17.0	15.1	6.9

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

Table 9

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST
AT GLENVIEW, IL (NORTH SHORE COUNTRY CLUB) 1/
1998-2001 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	SEEDLING VIGOR	DENSITY FALL 1998	STIMPMETER READINGS SUMMER 1999	STIMPMETER READINGS FALL 1999	QUALITY RATINGS APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
PENN A-1	5.8	6.7	8.2	4.7	8.0	108.7	126.8	7.9	7.7	8.2	7.5	7.2	7.3	7.8	7.6
PENN G-6	5.6	7.1	8.1	3.7	7.7	106.3	127.5	7.8	7.4	7.6	7.0	7.2	7.6	7.9	7.5
PENN A-4	5.6	7.1	8.4	4.3	8.3	111.2	129.3	7.3	8.1	7.8	7.1	6.8	7.1	7.8	7.4
PENN G-1	5.5	6.1	8.3	4.7	8.7	107.3	132.5	7.4	7.7	7.6	6.9	7.0	7.2	7.8	7.4
L-93	5.8	6.3	7.3	5.0	7.7	113.3	133.0	7.2	7.3	7.3	6.8	6.8	7.7	7.8	7.3
BACKSPIN	5.2	6.8	7.3	5.0	8.0	112.3	130.0	6.7	7.0	6.9	6.5	6.6	7.0	7.5	6.9
GRAND PRIX (LCB-103)	5.3	6.5	7.5	4.0	8.0	116.2	130.8	6.6	7.3	7.2	6.6	6.8	6.8	7.1	6.9
IMPERIAL	5.7	6.7	7.8	5.0	7.7	107.8	124.2	7.0	6.9	7.2	6.4	6.5	6.9	7.3	6.9
PROVIDENCE	6.2	6.3	7.3	4.3	7.7	109.5	129.5	7.3	7.1	7.0	6.5	6.3	6.8	7.3	6.9
SR 1119	6.0	6.5	7.6	3.7	7.3	107.8	130.3	6.9	7.0	7.2	6.3	6.8	7.1	7.1	6.9
TRUELINE	6.0	6.0	7.3	4.7	7.0	110.7	129.0	6.8	6.8	6.8	6.6	6.9	6.7	7.5	6.9
PUTTER	5.4	5.8	7.1	5.7	6.7	110.0	128.5	7.2	7.1	6.8	6.7	6.3	6.5	6.9	6.8
SR 1020	5.8	5.3	7.2	3.7	7.0	110.2	129.5	6.6	7.3	6.8	6.2	6.3	6.9	7.3	6.8
CATO	6.1	5.8	7.1	4.0	7.3	114.3	133.8	6.0	6.3	6.9	6.3	6.2	6.8	7.3	6.5
VIPER	6.3	6.1	7.3	3.7	7.7	113.0	127.3	6.3	6.3	6.8	6.0	6.4	6.5	6.8	6.5
CENTURY	4.7	6.5	8.1	4.7	8.3	114.0	131.5	5.7	6.3	6.8	6.1	6.4	6.4	6.6	6.4
CRENSHAW	6.3	6.1	7.2	5.0	7.7	115.7	132.3	5.7	6.3	6.3	6.3	6.4	6.4	6.5	6.3
PENNCROSS	5.3	5.9	5.8	5.3	6.0	121.0	129.2	6.1	5.3	5.8	5.5	6.0	6.2	6.2	5.9
LSD VALUE	0.5	0.8	0.5	2.1	0.9	57.2	84.1	0.8	0.9	0.7	1.2	1.0	1.0	0.7	0.3
C.V. (%)	11.3	14.8	8.4	19.1	6.8	17.1	20.2	13.1	15.6	11.8	17.3	13.9	14.6	11.2	6.2

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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Table 10

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST
AT FLORENCE, KY (LASSING POINTE GOLF COURSE) 1/
1998-2001 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	DENSITY SPRING	PERCENT LIVING GROUND COVER SPRING 1998,2001	PERCENT LIVING GROUND COVER SUMMER 2001	QUALITY RATINGS MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
PENN A-4	7.4	7.0	8.2	7.8	97.5	87.7	7.3	6.4	6.9	8.1	7.4	7.8	7.4	7.9	7.4
PENN G-6	7.1	7.0	7.2	6.8	98.0	91.0	7.1	6.5	6.3	7.8	7.0	7.5	7.1	7.1	7.1
PENN G-1	7.3	7.7	7.1	7.3	96.3	86.3	7.1	6.6	6.8	7.8	6.5	7.2	6.5	7.3	7.0
SR 1119	7.3	7.0	7.2	7.1	92.5	83.0	6.9	6.7	6.9	7.8	6.6	7.0	7.3	6.8	7.0
BACKSPIN	6.9	6.3	7.8	7.3	96.5	88.0	6.8	6.5	6.5	7.7	6.4	7.0	6.7	7.3	6.9
CENTURY	6.4	6.7	7.8	7.8	94.2	78.0	7.2	6.7	6.1	7.0	6.3	7.6	6.7	7.4	6.9
PENN A-1	6.4	6.7	7.7	7.6	95.2	86.3	6.5	6.3	6.0	7.1	6.5	7.5	6.8	7.6	6.8
CRENSHAW	7.2	6.7	6.8	6.2	96.2	78.3	6.5	5.8	6.0	7.3	6.7	7.5	6.7	7.0	6.7
IMPERIAL	6.8	6.0	7.8	7.6	97.5	96.0	6.9	6.1	6.5	7.1	6.7	7.1	6.6	7.0	6.7
CATO	6.8	7.0	6.8	6.3	96.2	91.3	6.6	5.8	6.8	7.3	6.0	6.8	6.6	6.7	6.6
GRAND PRIX (LCB-103)	7.1	6.0	7.3	7.2	97.2	79.7	6.5	6.0	6.4	6.7	6.3	7.2	6.5	7.0	6.6
L-93	7.0	6.7	6.8	6.7	94.2	86.3	6.5	6.5	6.3	7.1	6.3	6.8	6.7	6.6	6.6
SR 1020	6.9	6.7	7.1	6.6	96.5	92.7	6.6	5.8	6.2	6.6	6.4	6.8	6.8	6.3	6.4
VIPER	7.2	7.7	6.8	6.0	95.5	76.7	6.1	5.8	6.3	6.7	6.1	6.5	6.8	6.5	6.3
PUTTER	6.2	5.7	6.4	6.1	96.0	84.7	6.3	5.4	5.9	6.4	5.9	6.3	6.5	6.7	6.2
TRUELINE	6.8	6.3	6.2	6.2	95.3	66.7	6.5	5.7	6.4	6.6	5.8	6.3	6.5	6.1	6.2
PROVIDENCE	6.8	6.7	6.7	6.2	97.7	78.0	6.4	5.7	6.7	6.6	5.4	6.1	5.8	6.6	6.1
PENNCROSS	6.9	7.0	5.9	6.2	92.7	76.3	6.2	5.4	6.0	5.6	5.3	5.5	5.7	6.0	5.7
LSD VALUE	1.8	1.9	0.7	1.2	13.4	49.8	0.7	2.4	1.8	0.8	1.0	0.7	1.0	0.8	0.4
C.V. (%)	16.6	11.4	12.2	16.7	5.4	18.2	11.4	25.2	18.1	14.2	17.4	13.3	15.0	13.4	7.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055 EXPIRES: 12-31-96

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)

Pennsylvania Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

G-6

3. VARIETY NAME

Penn G-6
Creeping Bentgrass

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*

RAD 11/17/04
~~Charles R. Krueger~~ Bruce McPheron
Associate Dean
0217 Agricultural Admin. Bldg.
University Park, PA 16802

5. TELEPHONE *(Include area code)*

814-865-5410

6. FAX *(Include area code)*

814-863-7905

7. PVPO NUMBER

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country _____ [X] YES [ ] NO

10. Is the applicant the original breeder? If no, please answer the following: [ ] YES [X] NO

a. If original rights to variety were owned by individual(s):
Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____

b. If original rights to variety were owned by a company:
Is the original breeder(s) U.S. based company? If no, give name of country _____ [X] YES [ ] NO

11. Additional explantion on ownership *(If needed, use reverse for extra space):*

J. M. Duich, Professor Turfgrass Science is breeder.
Employee of applicant with rights assigned to applicant.

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.